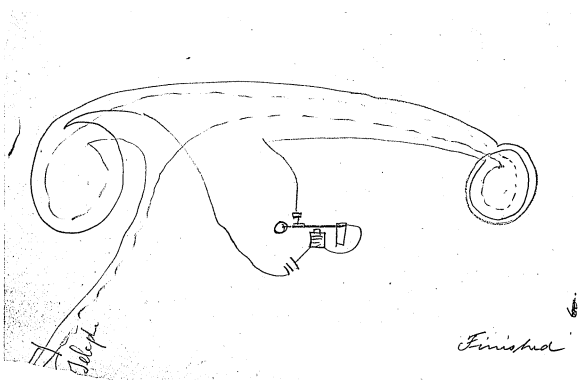
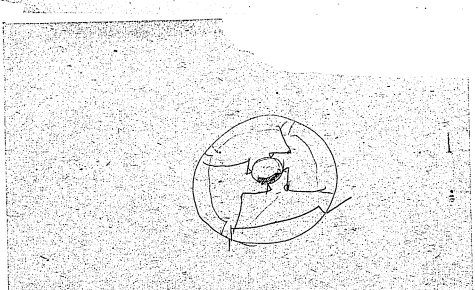
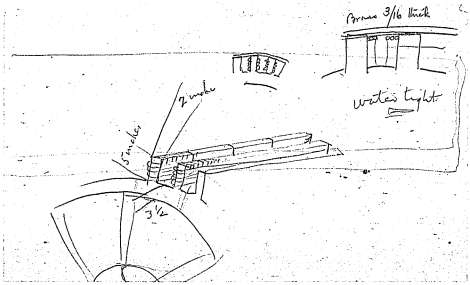
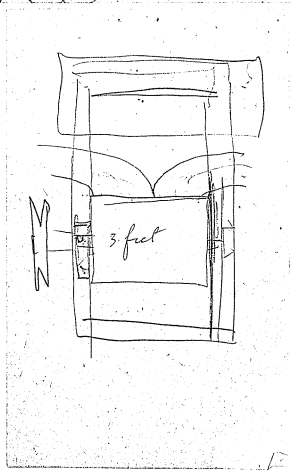
UNBOUND NOTES AND DRAWINGS
UNDATED, CA. 1890


Finished

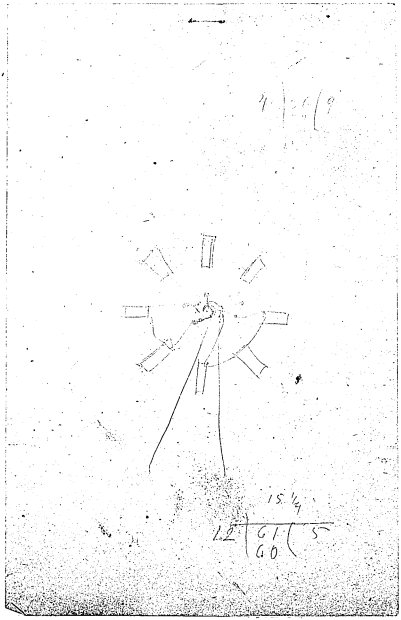



Brass 3/16 thick
water tight
2 inches
5 inches
3 1/2


3 feet
N

1 foot
3 feet
1 inch

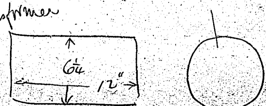
N
S
S
N
N
S
S
N



For 120 volts 160 cell will be needed
6.2 ampere = 1 HP
6.2 × 160 = 1000 cell ampere.
= 3 lbs Zn per H.P. per hr
1000 HP. = 3000 lbs zinc per hr
= 1½ tons roughly
= 6 tons zinc daily

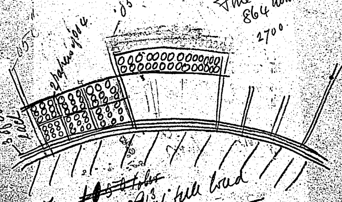
For E.H.P. by dynamo = 6½ lbs. per hr.
1000 HP = 6500 lbs
= 3 tons per h
= 12 tons coal per day.

#4 Transformer



1000 Volts + Amp 96 Com blocks
20 volts Amp. 16 "

1 #14 B&S 9 times round 2700 ft 16.2 lb × 96
(0.0453 (act. 2050) blocks 342 circ mils/per amp
14 #11 B&S (.091) 16 times round
+ 16 blocks. 700 ft 18 lb
Fine wire 864 turns of 3.2 feet
2700



1137. ~~10 5 0 tolts~~ Drop 89.3 at full load
3
(.19.8 Volt armat.

Pl
Cu
Energy Zinc
3
1.
2 #
2 ohms.
44
44
88.
2 m.o.

Gallo-Allmo
"Eden-Machine"
Ten the Jefferson
of
Illinois St. Chicago.
Energy 1888
= 14.75 tons.
= 1.635 × 10⁶
24 × 24 × 12 × 8.8 × 10⁶
1.246
1.36
3600 × 3600
240 × 240 × 12
88

1000 hp

6500 - per hour
4 Hours
26000

150 × 3/4

6 hp lb per hour
150.
4
600.
540 0.

12 tons for 4 hours run

2400 lb Zinc
9.600 — 4 tons Zinc,
4 Tons Coal to reduce
back to Zinc —

Hence Steam 12 tons } Coal
Battery pressure 4 tons

10% loss in base

42

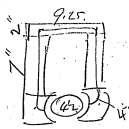
$$M = \frac{125}{L \times V \times \cancel{\text{[illegible]}}}$$

L = length of field × two sides × number of loops × common blocks × percentage action

$$V = \frac{\text{Mean pitch line of rim} \times 3.14 \times \text{Rev}}{12 \times 60}$$

feet per second

percentage of magnetic line to break 42:1
10% lost in base



5 7/16

9.25
1.00
1.00
14.00
9.00
5.434
39.680

.062
.031

5.434
4
9.736
39.680/9.340

9.34/39.680 | 4.2
37.36
2.320
0

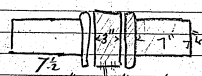
2 1/4
5 3/16

E

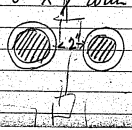
Multiple dynamo.

× Pitch line of Armature 36"
× Section of core 3" × 7"
× Cutting speed 50 ft per second
× 1 #109" wire twice around and 26 blocks
× Total Commutator 156
1-27 53 79 105 131 all connected together & so each consecutive one
× Two brushes placed on 1 + 27

125 Volts 360 amp. 300 Rev.



Cores 5" × 7" with 7" diam head



M.D. 2

Weight of iron in rim of wheel & hold copper wire

858 Cub. in. · 28 lb = 240 lb
Copper 66
306

125
65 64
1716
240 24

Centrifugal force of 306 lb at 300 rev. + average 18 in = 14,000 lbs.

If we use ⅝ iron bolts the breaking strain for 24 would be 118,800 lb.

If ½" 211,200

100
50 lb
66
00

HBI HG

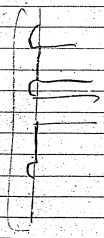
5000
20000

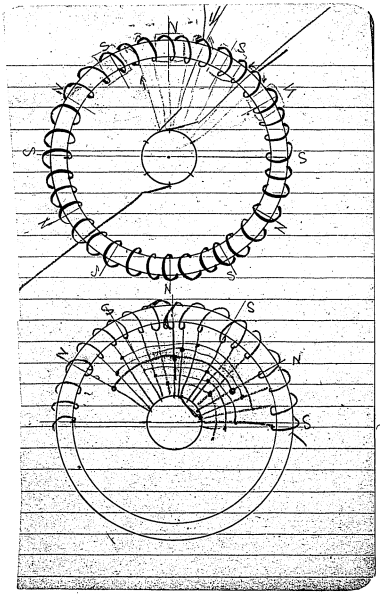
$\frac{100}{2} = 50$ an

12

$\frac{200}{2} \cdot 100$ wo

20000



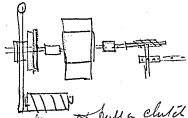


Current at 50 Volts.

Principle –

Motor turns centrifugally & clutch thrown in by magnet

Motor if it relaxes by running back must get a few turns before it does work to get up its center –



Magnet to pull a clutch

Can 6" X 5" outside $\frac{1}{2}$"

Magnet $2\frac{1}{2}$" face

1" Clear space bet. of magnet

Armature to run

$\theta = 2.3 \; B \; W \; q.$

6" Wide – $4\frac{1}{3}$

$5\frac{1}{3}$ $79 \; B \; W \; q \; (.042.)$

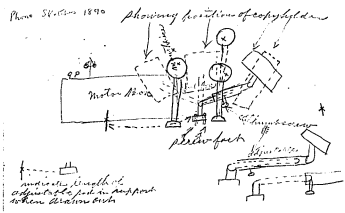
Armature

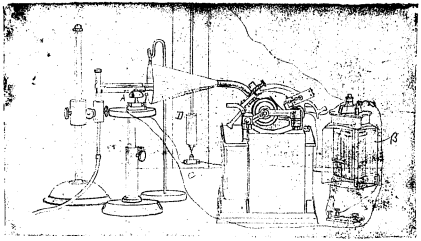
Total resist 10 Ohms

7 layers in Mag.

2 layers.

About 44 Blocks


Motor Block
photo-fast



Phonograph - notes

"Cable address
"Edison, New York"

From the Laboratory
of
Thomas A. Edison,
Orange, N.J.

Subjects

To attain the best results in taking piano records, one of the most essentials things are, to have the Phonograph in the best order possible for this we refer you to ~~the~~ the enclosed inspectors hand book.

The machine should be well oiled, and the speed of the shaft holding cylinder to revolve 130 revolutions per minute

The position ~~to~~ refer you to the enclosed diagrams

Motive Power

This should be either electric or water power. I find that business men as a rule object to using the treadle as an undignified and tiresome task.

Also a motor machine may be placed in the desk of the business man, where a foot power machine may not go.

Governor

The governor should be an electric governor. It should be set at a standard speed in the factory and so constructed that the user cannot change the speed.

The governor should be placed out of sight. I think the present governor, with its numerous delicate looking attachments does more to impress the new beholder with the idea that the phonograph is a complicated machine than all else. First impressions are often important.

Cylinders.

Cylinders should be single record. They should receive not less than a ten-minute dictation. If they can be made to take a 25-minute dictation they will be still more valuable. They should be non-breakable. I mean by non-breakable one that may be thrown from

the table to the floor without danger of appreciable injury.

Reproducer

The reproducer should be provided with a needle that would be sufficiently flexible to permit the point to remain in the groove without the use of an adjusting screw. This screw I consider objectionable in the hands of unskilled persons.

Stop and Start.

The "stop and start" movement should stop the cylinder instead of lifting the needle from the surface. It should be provided with two buttons, one for starting and one for stopping, both controlled by downward pressure.

Music

I think a machine for amusement purposes should be constructed, and that the business machine should not be used as ~~an~~ a musical machine.

Plan notes

(1890)

Rec. Hall of the Long distance
& Eckert of Sd. a in batteries

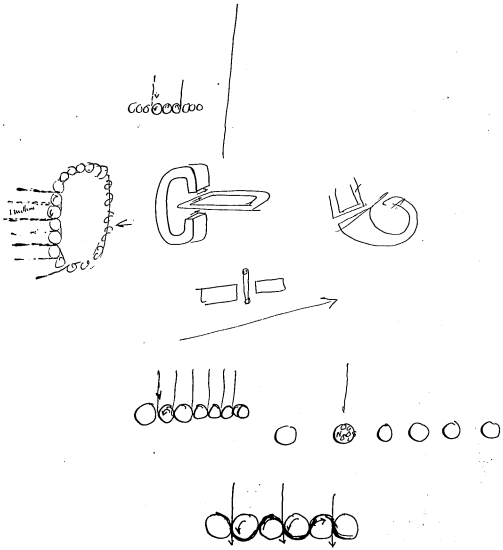
Mr Kennelly is to test whether an
Exhaustion Throw battery can be
charged up for a Storage battery
& get results so that we can make
a statement of how it can be used

Throw: Mr to get a singer mach.
& ascertain by exp. whether larger
mach is not needed & what it shall
be & what we can do with present or a
little larger battery

Kennelly measure resist & testing time from
Gladstone & of value of one battery

Kennelly measures resistance of Long distance
battery & telephone battery & makes a curve
of the value of each in comparison with
Leclanché cells on the same resistance
as they are used — Gladstone can
give the life when conditions are determined
Make a report of this for to show

SKETCHES & NOTES (1890)



THOMAS A. EDISON,
Central Station, Construction Dep't,
No. 65 FIFTH AVENUE.
NEW YORK.

Form M.
W. D. RICH,
SUP'T OF CONSTRUCTION.

.....188

Address reply to.....

Dental Instrument makers
Motor Mfgrs
Colleges
Chemical apparatus
Surgical Instruments
Telegraph " Dealers
Elect Supply & Equal Co
Gold & Stock
Phonoplex
Burglar alarms
Hotel Annunciators
Theatres (Incandescent gas lights)

25% better than any other building known
92% efficiency

Ad in all Electrical papers